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AUTHORITY

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DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL
WASHINGTON, D.C. 20310

IN REPLY REFER TO
AGAM-P (M) (5 Jan 68) FOR OT RD-670714

10 January 1968

SUBJECT: Operational Report - Lessons Learned, Headquarters, 459th Signal Battalion, Period Ending 31 July 1967

TO: SEE DISTRIBUTION

1. Subject report is forwarded for review and evaluation by USACDC in accordance with paragraph 6f, AR 1-19 and by USCONARC in accordance with paragraph 6c and d, AR 1-19. Evaluations and corrective actions should be reported to ACSFOR OT within 90 days of receipt of covering letter.

2. Information contained in this report is provided to insure appropriate benefits in the future from Lessons Learned during current operations, and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

Kenneth G. Wickham

KENNETH G. WICKHAM
Major General, USA
The Adjutant General

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 63d Signal Battalion (Radio/Cable)

This image shows a very faint, handwritten document page. The text is mostly illegible but appears to read "WELT SECTION E" and "P-A-F SHOT". A large, prominent number "2" is written vertically on the left side. The page is framed by a thick black border.

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DEPARTMENT OF THE ARMY
HEADQUARTERS 459TH SIGNAL BATTALION
APO 96240

SCCVNG-NT

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SUBJECT: Operational Report for the Quarterly Period Ending 31 July 1967
(RCS CSFOR-65)

TO: Commanding General
United States Army Vietnam
ATTN: AVIGC-DH
APO 96307

SECTION I
Significant Organization or Unit Activities

1. General:

a. The 459th Signal Battalion's area of communications responsibility has not changed since the last reporting period. Organizational changes involved a realignment of personnel, equipment, and missions by geographical areas.

b. These organization changes took place with the move of Company B, 459th Signal Battalion from the Tuy Hoa - Phu Hiep area to the Ninh Hoa area. Company B was initially given the responsibility for the Duc My, Nha Trang North and Ninh Hoa area. However, on 1 June 1967, a realignment was made and Company A was given the communications mission for Nha Trang North. The 261st Signal Company assumed responsibility from Company B for the complete Phu Hiep, Tuy Hoa and Vung Ro areas. The Signal Operations Platoon of Headquarters Company has been phased out of all site operations, and its equipment has been hand received to the operational companies for back-up and for utilization as spare equipment. The Nha Trang Army Area Communications Center, formerly under Headquarters Company, was placed under the staff supervision of Battalion Operations Section.

2. Activities:

a. During the past reporting period, the 459th Signal Battalion has continued to provide area communications and base camp communications support to US and ROK Forces.

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b. The Nha Trang based, battalion unit which are stationed at Camp John F. McDermott, have been engaged in an ambitious self-help construction project. In building the battalion cantonment area units of the battalion have detailed construction teams to assist in the building of ten, two story barracks; six quonset administrative buildings; two mess halls; four latrines; and two shower facilities. When completed, this cantonment area will house 700 troops.

c. In the area of civic action, approximately 100,000 piasters worth of Montagnard artifacts were sold. The proceeds were returned to the tribes located in the vicinity of Dalat by the Battalion Chaplain to enable the tribes to purchase essential supplies such as food and medicine. The Evangelical Orphanage continues to receive support from the battalion in the form of athletic programs.

d. The Republic of Vietnam's 651st Signal Battalion was furnished billet facilities by this battalion as a part of the civic action program.

3. Personnel and Administration: During this period, the battalion has had the finance records, along with finance clerks, of the 261st Signal Company (SPT) moved to Tuy Hoa - Phu Hieu area to be co-located with the company headquarters. After a 90 day experience factor, it was found that individual finance transactions were taking upwards of 96 man hours to complete. Such a transaction involved travel from Tuy Hoa - Phu Hieu area to the Nha Trang area by convoy for finance assistance; this convoy would also require physical security support. The cited change in procedure has reduced similar finance transaction periods to one hour.

4. Security:

a. During the quarter there were a total of 57 SECRET and 21 TOP SECRET clearances validated. There were 31 Crypto access authorizations and two CONFIDENTIAL clearances granted. There were two SECRET clearances suspended.

b. Defense plans for all sites and areas have been reviewed and up dated where necessary. Physical Security measures at all sites have improved. Necessary revetment projects are in progress and a program of revetment maintenance has been initiated.

c. At the 228th Signal Company, Hon Tre Island, 30 lights were installed for perimeter illumination. 2,500 square meters of jungle vegetation and trees were cleared, and the perimeter fence was moved an additional 10 meters to the perimeter of defense boundary. Three guard towers and four permanent type bunkers were constructed.

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d. The concertina perimeter of 261st Signal Company's Vung Ro Mountain site has been doubled as a result of additional brush and trees being cleared. A perimeter lighting system has been installed. A new perimeter fence and bunker system has been completed.

5. Safety:

a. Considerable command emphasis has been placed on safety during this quarter. However, the battalion still experienced the following recordable accidents and personal injuries:

<u>Vehicle Accidents</u>	<u>Personal Injuries</u>
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3	0
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b. Accident Exposure for the Quarter:

<u>MONTH</u>	<u>MAN DAYS</u>	<u>MILEAGE</u>
May	33,000	65,285
June	33,560	132,389
July	<u>31,590</u>	<u>129,334</u>
Total for Quarter	98,150	327,008

6. Training:

a. Approximately 75% of the personnel in this battalion received mandatory training during the quarter. This was no change from the previous quarter.

b. A considerable amount of OJT has been conducted, especially in the areas of operation and maintenance of equipment. This refresher and advance training was conducted at section level.

c. Cross training was conducted with emphasis on present and future demands in critical MOS's due to rotational dates.

d. Physical training had been a training problem area which was rectified by the organization of competitive athletic programs. Field fortification and construction programs also have contributed to the physical training needs.

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e. A firing range to facilitate quarterly familiarization training has been completed and is now in use on Hon Tre Island by the 228th Signal Company.

f. During the first week of June 1967, three civilian employees of the US Army Electronics Command, RVN Field Office, gave instructions to VHF team chiefs in the Nha Trang Area and Hon Tre Island on the installation and operation of a filtering device which permits transmission of 24 VHF channels over one AN/TRC-24 radio system.

g. A total of three Officers and 22 Enlisted men participated in formal schools conducted by the 1st Signal Brigade. Two Officers and three EM attended the MSQ-73 Technical Controllers school. One Officer and one EM attended the Microwave school. Fifteen EM have attended the AN/TRC-24 Radio school. Three EM have undergone training in cable splicing techniques.

h. A new training program is in the process of being implemented which can easily be amalgamated with the battalion's self-help construction program and its assigned mission. This program combines the mandatory and mission essential training into one concise training plan. It is based on the extension course-group study method of instruction.

7. Operations:

a. During the first part of May, the AN/MTC-1 switchboard which was placed in service on Hon Tre Island, became fully operational. The initial load was 84 local subscribers and 14 trunks. Twelve additional local subscribers and four trunks have been added.

b. On 2 May two civilian employees of DCA-SAM WECO provided technical assistance to personnel of Company A on the operation of the AN/TCC-28 Mobile Dial Central Office (Goldfinch) and the AN/MTC-9 Manual Central Office (Nha Trang Long Distance). As a result of their visit a traffic engineering plan was devised to interconnect the present Air Force Stromberg Carlson XY exchange, the Goldfinch AN/TTC-28 and the new Air Force AN/TTC-28. At the Nha Trang Long Distance Switchboard tests were run on the TA-187 for plug supervision circuits. As a result of these tests, five plug supervision circuits have been added to the Nha Trang LD board providing a more efficient operator-subscriber service.

c. On 5 May 1967, a test was conducted with an Intrusion Detector (AN/PRS-1), by members of the 1st Signal Brigade, 21st Signal Group and 459th Signal Battalion, for employment as a perimeter defense

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warning device for isolated signal sites. The results of the tests were excellent and action has been taken by the 1st Signal Brigade to procure the devices for isolated sites in the battalion's area of responsibility.

d. On 5 May 1967, a 400 pair cable was terminated between the Goldfinch site and Nha Trang Technical Control for use by the Air Force AN/TRC-66 (60 Channel) Tropo system located at the Goldfinch site.

e. On 6 May 1967, an AN/TCC-20 tone pact (Teletype Carrier) was tested on a channel of the AN/TRC-66 Air Force Tropo System to determine if a tone pact could operate efficiently over the system. During the 72 hour period, the teletype test proved satisfactory for service during stable periods of system operation. But, during a large portion of the time, the system was out due to TRC-66 equipment and propagation problems. Because of the unstable equipment the AN/TRC-66 system was deactivated and the Air Force removed their equipment from the Non Tre and Goldfinch sites during the last week of May. Upon the deactivation of the Air Force AN/TRC-66 system the 400 pair cable was terminated at a newly constructed terminal board located next to Company A's VHF and Carrier vans at the Goldfinch communications site. This enabled Company A to route all VHF and Carrier circuits direct to Nha Trang Technical Control facility without terminating the circuits in the Goldfinch, AN/TTC-28 Frame. The cutover of all circuits was completed on 20 June 1967.

f. On 8 May 1967, a full duplex secure teletype circuit (Cable) was installed from the Nha Trang Army Area Communication Center to the 5th Special Forces Group Communications Center. Previously, the 5th Special Forces Group (ABN) had received over-the-counter-service from the Nha Trang Air Force Communications Center.

g. On 12 May 1967, engineers from STRATCOM-Pacific-CENIA visited the battalion to conduct a preliminary survey of the Ninh Hoa area in order to develop plans for an outside cable plant to support a proposed 1000 line dial central office. The dial exchange will provide service to the ROK and US Forces personnel in the Ninh Hoa area.

h. On 14 May 1967, a central power system was placed in service by Company A at the Goldfinch communications site. The system utilizes two 100KW Generators and two 45KW generators, with buss bar distribution.

i. During the second week of May, Company A's Cable Platoon began a 200 pair buried cable project from the Air Force Dial Exchange to the Grand Hotel (IPTV Headquarters) and the Nha Trang Sub-Area Command Headquarters (MACV Compound). This cable will be used to redistribute

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local dial service to the subscribers at these two Headquarters and to clean-up the field-wire "spider webs". The project is presently 40% complete and on 31 July easement rights were approved for the burial of the remainder of the cable.

j. Beginning on 16 May 1967, frequencies on all VHF systems in the battalion's area of responsibility were changed. A new block of frequencies was authorized by the 21st Signal Group in an effort to upgrade the quality of the existing communications systems. These changes were completed on 16 June 1967.

k. On 19 May 1967 the 228th Signal Company's site on Hon Tre Island placed in service a central power system, utilizing two 200KW generators with bus bar distribution.

l. On 22 May 1967, an AN/MTC-3, two position, 120 line switchboard was installed at the Tuy Hoa MACV compound to upgrade the communications support provided the advisory elements. The former switchboard, a one position SB-86/PT, could not meet the growing demand for telephone service.

m. On 23 May 1967 a portion of the VHF systems in the battalion's area of responsibility were placed under the management of the Army Area Communications System (AACS). The new management procedure redesignated the identity of systems and circuits and simplified reporting procedures on outages.

n. On 24 May 1967 Company B displaced, by convoy, from Nha Trang to Ninh Hoa. The move of the company was to facilitate and consolidate company operations at Ninh Hoa. The motor movement was accomplished by infiltration without incident.

o. On 27 May 1967 an A Band VHF test system was installed between Phu Hiop and Vung Chua Mountain by the 261st Signal Company (SPT). The purpose of this test was to attain a higher quality system to replace the existing systems of marginal quality. The results were unsatisfactory due to propagation.

p. During the last week of May a civilian engineer, DGA-SAM, devised a new method of aligning the Signaling Frequency (SF) units at the Air Force Dial Exchange which are used with the Nha Trang, Long Distance Operator's Direct Dial (ODD) circuits. This new alignment method increased the reliability and quality of the existing circuits and resulted in an increased number of ODD circuits (27 each).

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q. During the week of 4-10 June 1967, Company A, participated in a 24 channel communications test conducted by the US Army Electronics Command. The purpose of the test was to use 24 carrier channels in conjunction with the TRC-24 Radio system. This was done using a filtering system and a T302B model TRC-24 transmitter on a reduced distance test. The results were excellent, and it was decided to try a more challenging test from Nha Trang to Hon Tre Island.

r. During the week of 11-17 June, a VHF test system from Nha Trang to Vung Chua Mountain was established with relays at Ninh Hoa and Vung Ro Mountain. The units involved in this test were Company A at Nha Trang, Company B at Ninh Hoa, 261st Signal Company at Vung Ro and the 41st Signal Battalion at Vung Chua Mountain. Problems were first encountered on the system between Ninh Hoa and Nha Trang. After attempting the test shot from both Nha Trang North and Camp J. F. McDermott, Nha Trang, the communications site at Goldfinch was selected for the best propagation response on 25 June 1967. Frequency problems then arose on the Vung Ro to Vung Chua Mountain portion of the system. On 17 July the test shot between Nha Trang and Ninh Hoa was rerouted through a relay at Hon Tre Island. This system has been tentatively accepted for channelization .

s. Also, during the week of 11-17 June 1967, the 24 channel, TRC-24 Radio system was installed and tested between Hon Tre Island and the Goldfinch communications site in Nha Trang. This test was successful. As a result of this test, the 24 channel BBH25 system was installed between Cam Ranh Bay and the Nha Trang, Goldfinch communications site. During the first week of July the filter was removed, due to technical difficulties, and the system was downgraded to a 12 channel system.

t. On 18 June 1967, the battalion established a radio teletype net for internal communications. Initial communications modes are CW and voice. After crypto-site approval is received, this net will be used for expeditious dissemination of classified information throughout the battalion. The net is also being used as a training vehicle for all personnel in MOS 05C.

u. On 21 June 1967, the erection of an AB-216 tower by detachments of the 261st and 518th Signal Companies at the Tuy Hoa Air Base was completed. The replacement of the light weight tower AB-585 with the AB-216 will provide greater stability against gale force winds. This tower supports antennas for Microwave and VHF systems.

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v. An AN/TRC-90 tropo school was established at the Goldfinch communications site on 26 June 1967. A detachment of the 362nd Signal Company is responsible for operation of this school.

w. On 3 July 1967, Microwave and VHF equipment at the Vung Ro Mountain site was moved into the new, air conditioned, microwave building constructed on the site.

x. During the first week of July, Company A installed three 100 pair cables between the STRATCOM Relay facility and the Nha Trang Technical Control for data terminal lines. These cable projects were completed on 6 July 1967.

y. On 15 July 1967, 30 direct dial circuits were established between the Goldfinch Dial Exchange (AN/TTC-28) and the Nha Trang Long Distance Switchboard (AN/MTC-9) to permit Goldfinch subscribers to dial direct to the LD Board. After the circuits were activated, technical difficulties developed in the ground return circuitry. On 19 July the circuits were deactivated and the original magneto circuits were installed. The direct dial circuits are still under study and technical assistance has been requested.

z. During the second week of July three tone packs were activated by the Goldfinch communications site. The 77UXA3 tone pack to Saigon (AN/TCC-4 to AN/TCC-4) was established with no problems. The 77UXK2 tone pack to Gia Dinh required interfacing between an AN/TCC-4 and an AN/FCC-19 teletype carrier. Quality assurance test have been made carrier to carrier, but circuit activations is still pending. The 77UXA2 tone pack to Cam Ranh Bay requires interfacing between an AN/TCC-4 and an AN/FGC-60 teletype carrier. Quality assurance test have been made, carrier to carrier, but additional channel frequency compatibility problems have developed and technical assistance has been requested.

aa. On four different occasions during the past quarter Company A was required to splice or repair damaged multi-pair cable. On 3 June the 100 pair Sattelite Communication cable was partially cut by RMK-BRJ. On 18 June, the 400 pair Camp McDermott cable and the 100 pair Phelisan cable were cut by a VNAF entrenching machine. On 14 July a 50 pair Goldfinch cable was cut accidentally. On 16 July two 50 pair cables on Hon Tre Island were partially destroyed by fire when a unit on the island was burning-off jungle brush.

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8. Logistics:

a. This organization has experienced a considerable amount of difficulty in procuring steel beds, wall lockers, and foot lockers. These items have been on requisition in excess of four months and have been reported in the Periodic Logistics Reports.

b. Ordnance and Signal equipment hand received to Task Force Oregon units have been laterally transferred. The reduction in major line items, caused by this transfer, has not impaired the current mission of the battalion. It is anticipated that the AN/VRC-12 series radios and the telegraph terminals, AN/MSC-29, will be difficult to replace.

c. Multi-pair cable for outside plant telephone installation in Nha Trang and Phu Hiep (Tuy Hoa) has been on requisition in excess of four months. These projects are incomplete as a result of the shortage of required cable. The requisitions have been forwarded through 1st Signal Brigade channels as directed.

d. Recent changes in the authorization of jungle fatigues, as organizational issue, have had no great impact on their availability. The local support unit continues to provide clothing as it arrives, but the fatigues are still in short supply. Jungle boots have not been a problem.

e. Support by Sub-Area Command Installation Engineer for the construction of temporary cantonment facilities at remote sites has been virtually nonexistent. In those areas where base development submissions have been completed, the installation engineer has not approved the self-help job order requests for the building of tent frames and floors. Permanent construction in support of cantonment areas continues, and the majority of the battalion is billeted in new facilities.

f. As authorized by TB 750-101, July 1966, air conditioners for signal shelters have not been issued. Considerable difficulty has been experienced in obtaining validated requisitions from support facilities. Alternate programs to employ conventional, window mount units have been announced, and those air conditioners have been requisitioned. Some of the air conditioners are currently in depot stocks of the 1st Logistical Command, but the command has not issued the necessary release for the items to be issued. The maintenance experience on the operating life of electronic equipment, used in signal shelters, has been shortened by the high, ambient temperatures. Sandbag revetments, sun roofs, and fans (when available) have reduced the temperature in vans as much as 20 degrees

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fahrenheit, but the temperatures still dwell between 85 and 90 degrees fahrenheit. Air conditioners are essential for operating efficiency.

9. Aviation: None.

10. Organizational Structure: The present structure and locations of the battalion units are as follows:

- a. Headquarters and Headquarters Company - Nha Trang
- b. Company A - Nha Trang
- c. Company B - Ninh Hoa
- d. 213th Signal Detachment (Crypto Spt) - Nha Trang
- e. 228th Signal Company (RR VHF) - Hon Tre Island
- f. 261st Signal Company (Spt) - Phu Hiep and Tuy Hoa

SECTION III

COMMANDER'S OBSERVATIONS AND RECOMMENDATIONS

Part I. Observations (Lessons Learned)

1. Personnel.

Personnel Planning

Item: As a new mission area arises proper personnel manning should be planned.

Discussion: When a new communications mission arises, all aspects of the mission should be analyzed to insure that it is staffed with an adequate number of personnel. Support requirements for the mission should be analyzed to include generator and electronic maintenance.

Observation: Proper prior planning will assist in identifying all areas and aspects of the mission that will require qualified trained personnel.

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2. Operations:

24 Channel System

Item: Operation of two AN/TCC-7 carrier systems over one AN/TRC-24 radio.

Discussion:

a. A twenty four channel AN/TRC-24 system can be successfully operated, using a "B" model transmitter, T-302, for the AN/TRC-24 and two AN/TCC-7's at each terminal. The "B" model transmitter must be used because the earlier models do not have sufficient band width. This is done by employing in the circuit two four wire-two wire hybrids with filtering network. One of the hybrids is used at each terminal. The hybrid makes it possible to connect two AN/TCC-7's to one AN/TRC-24 and the filter separates the two carrier systems. This is necessary because one carrier operates in the frequency range of 12-60 KC while the other operates from 60-108 KC.

b. Installation Procedure: The group panel of one AN/TCC-7 at each terminal must be slightly modified by placing a lift jack in the cable that connects the sub-group panel to the group panel. At this point the modulated signal frequency range is 60-108 KC. This signal is taken out and fed into the AN/TRC-24 through the hybrid by spiral-4 cable. The receive signal for the modified carrier stack is picked up in the hybrid and inserted in the "68-108 Out" jack located on the sub-group panel, while the unmodified stack operates in the normal manner and is connected by the same spiral-4 cable as the transmit side. The "Local/Remote" switch on the carrier supply panel of the unmodified AN/TCC-7, at each terminal, is placed in the "Remote" position while the modified stack is placed in the "Local" position. The "68KC Adj." (R-99) on each modified AN/TCC-7 is rotated all the way counter-clockwise and the 64 KC amplifier tube (V-7) is removed from the modified AN/TCC-7 of the master station. A patch is inserted between the "sync" jacks on the carrier supply panel of the two AN/TCC-7's at each terminal. The combined output from the hybrid is connected to the AN/TRC-24 by using spiral-4 cable.

Observation: By using a hybrid and filter network and following the above procedure two AN/TCC-7 carrier systems can be operated over one AN/TRC-24 radio.

Cable Trenching on Hard Surface Roads

Item: Lack of proper equipment to break hard surface roads for cable trenches.

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Discussion: When proper equipment, such as jack hammers, are not available, it has been found that a large "C" hook, a component of the winch of a 2½ ton truck, is a usable substitute. The "C" hook will cut through the hard road surface (asphalt) creating a ditch that can be cleaned out by hand tools.

Observation: Hard surfaced roads can be easily trenched through the use of a "C" hook.

AN/MGC-22 Teletype

Item: Experience has shown that teletype machines in an AN/MGC-22 operate erratically for short periods of time for no apparent reason.

Discussion: The AN/MGC-22 has sigma relays installed as low level keying devices. The teletype machines in this type of installation were running open periodically, for no apparent reason. By experimenting with the temperature of the shelter it was disclosed that unstable relay operation occurred when the temperature rose above 80 degrees fahrenheit. When the air conditioners lowered the temperature to below 78 degrees, the condition was eliminated.

Observation: The AN/MGC-22 equipment, employing sigma relays, as low level devices, should not be operated unless temperatures can be stabilized at 78 degrees fahrenheit.

Preservation of Plastic Insulated Cable

Item: Caution should be used with open fires for burning shrubbery or clearing areas in close proximity to plastic insulated cable.

Discussion: When using open fires for burning trash, shrubs, or clearing right-aways, personnel in control of the task should be cautioned to contain the fire a safe distance from existing plastic insulated cable. The plastic insulation is subject to melt or burn from intense heat.

Observation: Caution should be used when using open flame fires near plastic insulated cable.

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Antenna Anchors

Item: Failure of antenna guy anchors in sandy soil.

Discussion: The guy, supporting the top six sections of a tower, AB-585, was extracted from the ground causing the top six sections of the tower to fall. Although this anchor's tension had been constantly checked and tightened, the operator was not cognizant of the fact that each time he increased the tension he was actually extracting the anchor from the ground. In sandy soil antenna towers that exceed 50' in height should be secured to a "deadman", i.e. a 50 gallon drum filled with concrete and buried under the surface.

Observation: In sandy soil anchors for antenna towers should be checked and properly secured in the ground.

Power Generator Dummyload Field Expedient

Item: It is difficult to test a power generator under a normal load after it has been repaired.

Discussion: After a generator has been repaired, it is not, generally, feasible to test its ability to support a normal load because the equipment normally serviced by the generator is either providing communications system support or is not available. To compensate for this factor a dummy-load capable of dissipating at least 15KW may be made by using a 55 gallon drum, filled with a saline solution (for a three phase unit three drums are used). The barrels should have the tops removed and be free of dirt, paint, and rust. The barrel acts as the negative electrode and may be connected to the generator with heavy duty wire and large alligator clips (use 2/0 or 1/0). The positive electrode is a copper rod or stripped 2/0 solid wire suspended in the center of the drum. The depth of the center electrode is adjusted to vary the load current. The correct solution is approximately one pound of common salt (Sodium Chloride) to 55 gallons of water. Extreme caution should be used when using a dummyload, and warning signs should be posted.

Observation: A field expedient dummyload for testing power generators may be constructed using a saline solution in a 55 gallon drum.

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PP-685 Ventilation

Item: Failure of the PP-685 power supply is often due to overheating.

Discussion: Temperatures in signal vans are usually excessive despite the use of exhaust fans and oscillating fans. By pulling the PP-685 off the radio set AN/TRC-24 out of its rack, approximately 4-6 inches, ventilation is increased, considerably. In an area where this practice was enforced, failure of the PP-685, due to overheating, was reduced in spite of the rise in atmospheric temperature.

Observation: To reduce the number of outages due to overheating of the PP-685, slide the power supply out of its rack approximately 4-6 inches.

Practice Alerts

Item: Practice alerts should be held, periodically, during daylight hours.

Discussion: In order to adequately check defense plans, it has been found that practice, daylight alerts are very helpful. During daylight, the perimeter can be checked to see if it is adequately manned, bunkers over or under manned, and if the positions of the bunkers are in keeping with the best defensive principles.

Observation: A practice alert during daylight hours provides an excellent opportunity to check troop deployment and perimeter coverage.

3. Training and Organization:

Lessons Learned

Item: Rapid dissemination of lessons learned.

Discussion: Recently this unit received a compiled report of all lessons learned in Vietnam through May 1966. However, to be of value, these reports should be disseminated as early as possible (within three months) because the information derived is out-of-date before it can be employed.

Observation: Lessons learned should be compiled and disseminated as rapidly as possible if they are to serve any purpose.

4. Intelligence: None

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5. Logistics:

Power Cable Installations

Item: Lack of commercial type cable fasteners.

Discussion: In the recent installation of a power distribution system a method of attaching heavy power cable to glass insulators (which were mounted on cross arms) had to be devised. On the intermediate poles copper wire was used to lash the cable to the insulators. However, on the end poles it was found that there was so much tension the copper wire would not hold. Therefore, on the end poles the power cable was looped around the insulators and secured with wire rope clamps, thus placing all the tension on the cable itself.

Observations: When commercial type fasteners are not available power cable can be secured with copper wire and wire rope clamps.

Chaplain Supplies

Item: The difficulty in obtaining expendable Chaplain supplies in Vietnam.

Discussion: Expendable Chaplain supplies are difficult to obtain and in some cases have been found to be not available. Each Chaplain coming to Vietnam should include in his hold baggage a 6 month supply of such things as grape juice, communion wafers and candles.

Observation: It is recommended that each Chaplain enroute to Vietnam be advised to include in his hold baggage a 6 month supply of expendable Chaplain supplies.

RF Dummy Load

Item: An RF dummy load is required to perform adequate tests on SSB equipment such as the Collins KWM2A transceiver.

Discussion: In the performance of the final testing on the KWM2A, or similar low power high frequency radio equipment, a load test must be performed. An acceptable dummy load may be easily fabricated from two 75 watt incandescent light bulbs wired in series. When the optimum output of the KWM2A has been attained, one bulb will reach full brilliance and the second bulb half brilliance. If the second bulb fails to light, it is indicative that the equipment is not functioning properly and requires

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additional maintenance. The impedance presented by the two lamps approaches 50 ohms and is compatible with the equipment.

Observation: Maintenance shops tasked with supporting the KWM2A or similar equipment should employ a field expedient dummy load for final testing.

Ammunition Storage

Item: Storage of ammunition in bunkers.

Discussion: Units store their ammunition in defensive bunkers in order to have a sufficient amount immediately available in event of an attack. It was noticed that ammunition which remains in bandoliers or pasteboard containers within the metal boxes does not deteriorate. However, when the ammunition is removed and exposed to the air and then placed back into the metal containers, without the cloth and pasteboard protection, it corrodes.

Observation: Ammunition which is stored in open areas should remain in its protective covering. This will reduce corrosion caused by exposure to the elements.

6. Safety:

Trailer Safety Chains

Item: There is a safety hazard involved when $\frac{1}{2}$ ton trailer safety chains are not properly secured to the vehicle.

Discussion: If the $\frac{1}{2}$ ton trailer safety chains are not properly secured to the vehicle, when traveling over rough terrain or roads, they can easily become disengaged if the hook eyes are not securely wired after attaching them to the vehicle. A dragging chain could cause a serious accident.

Observation: All trailer safety chains should have the hooks wired closed after they are installed on the vehicle.

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SECTION II

COMMANDER'S OBSERVATIONS AND RECOMMENDATIONS

Part 2. Recommendations (Lessons Learned)

a. Personnel: None

b. Operations: Based on the limited number of long distance telephone trunks available to subscribers for in-country and overseas service, it is recommended that all major local exchanges, i.e. Danang, Pleiku, Nha Trang, etc, be graded to limit access to the Long Distance Exchanges by establishing classes of service, i.e. Class A, C, etc., to up-grade the efficiency of the in-country and overseas long distance telephone service.

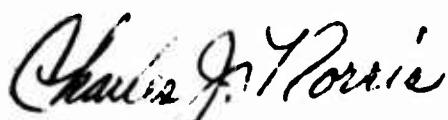
c. Training and Organization: None

d. Intelligence: None

e. Logistics: Equipment which is withdrawn from one battalion and assigned to another organization should be "laterally transferred" to insure accountability and proper command maintenance management.

f. Safety: None

g. Aviation: None


CHARLES J. MORRIS
LTC, SigC
Commanding

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SUBJECT: Operational Report for the Quarterly Period Ending 31 July 1967
(RCS CSFOR-65) WCEKAA

HEADQUARTERS, 21ST SIGNAL GROUP, APO 96240 26 August 1967

THRU: Commanding General, 1st Signal Brigade (USASTRATCOM) ATTN: SCCVOP
APO 96307

Deputy Commanding General, USARV, ATTN: AVHGC-DH, APO 96307

Commander in Chief, USARPAC, ATTN: GPOP-OT, APO 96558

TO: Assistant Chief of Staff for Force Development. Department of the
Army (ACSFOR-DA), Washington, D.C. 20310

1. Transmitted herewith is one (1) copy of Headquarters 459th Signal Battalion Report, subject: as above.
2. Concur in the Commander's observations with the following comments:
 - a. Reference Section I, para 8a: 21st Signal Group Logistics personnel are providing assistance to the unit to obtain release of all types of TOE equipment shortages.
 - b. Reference Section I, para 8f: The comment concerning lack of air conditioners for communications shelters is significant. Heat produced by operational communications gear will eventually adversely affect the equipment. Lack of air conditioning is detrimental to the mission accomplishment in Vietnam. In January 1967, a program to obtain air conditioners for communications shelters was started. To date, results have been largely negative. Logistics Directorate, 1st Signal Brigade, indicates that U.S. Army Material Command Mobility Equipment Center will not issue air conditioners due to a lack of specific information on over-all requirements from USARV. It is recommended that continued action be taken to obtain release of required air conditioners.
 - c. Reference Section II, Part I, para 2:
 - (1) Item: Cable Trenching on Hard Surface Roads. This HQ does not concur with the recommended method of breaking up hard surfaced roads. The truck mounted winch is designed to pull steady loads which place a constant strain on the winch drive and cable. In pulling a hook

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through a road, it could easily catch on a rock, buried pipe, or other object in the road. The sudden stress not only could damage the winch drive mechanism (although there is a shear-pin safety device) but it also presents a very serious personnel safety hazard. If the object catching the hook breaks loose suddenly, personnel working in the area could be seriously injured. All battalions of this group have been directed not to use this method.

(2) Item: Power Generator Dummy Load Field Expedient: 1st Signal Brigade has disseminated this information. 21st Signal Group Logistics Section is preparing this information for distribution to subordinate elements.

(3) Item: Commercial Type Cable Fasteners: Hardware for power distribution and transmission systems is a problem throughout the command. In many cases non-standard items had to be procured locally or field expedients used in order to complete a power project. Efforts to locate an in-country source for this type of material are continuing.

(4) Item: RF Dummy Loads: The use of light bulbs for RF dummy loads is a good field expedient in that the repair technician is able to key the transmitter for testing. However, the light bulb type of dummy load is unsuitable for tuning the coils in the IF and RF sections of the KWM-2A. A capacitance type of dummy load is required for this operation.

s/Charles H. Burr Jr.
t/CHARLES H. BURR JR.
COL, SigC
Commanding

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2d. Ind

SUBJECT: Operational Report - Lessons Learned for Quarterly Period Ending
31 July 1967 (RCS CSFOR-65) WCEKAA

DA, HQ, 1st Sig Bde (USASTRATCOM), APO SF 96307

15 Sep 1967

TO: Commanding General, United States Army Vietnam, ATTN: AVHGC-DH,
APO 96375

Commanding General, United States Army Strategic Communications
Command, Fort Huachuca, Arizona 85613

1. Forwarded for your information, one copy of Operational Report -
Lessons Learned for 459th Signal Battalion.

2. Concur in Commander's Observations and Recommendations and add
the following comments:

a. Reference: Section I, para 8a: Continue follow-up of requisitions
by the submitting units is the key to obtaining these and any scarce items.

b. Reference: Section I, para 8f: The statement that these
air conditioners are presently in 1st Log Depot stocks is in error. The
air conditioners for this project are scheduled for shipment to USARV
beginning in September 1967. USARV C-E has been provided specific ship-to
information which was requested by CG, USAMEC in regard to the shipment
of air conditioners for communications assemblages.

c. Item: Personnel Planning, Section II, Part I, page 10. New
missions are reviewed for total impact, however, CONUS training base is
unable to meet the RVN requirements in all areas. This requires the opera-
tion of unit schools..

d. Item: 24 Channel System, Section II, Part I, page 11. The
combining of two AN/TCC-7 to obtain a twenty-four voice channel capability
over a single AN/TRC-24 system was developed by USAECOM. Method presented
in this report is technically sufficient. USAECOM reports that the com-
bining of two AN/TCC-7 is applicable to any radio set with the required
band width such as the AV/GRC-50, AN/TRC-90, AN/TST-101 and AN/TRC-24.
This combining is not limited to the AN/TRC-24/B models, however, as applied
to other AN/TRC-24 models; filter EL-101 in the base band amplifier must be
by-passed.

e. Item: Preservation of Plastic Insulated Cable, Section II,
Part I, page 12. This is a normal, common sense, precaution and should
not be limited to this subject.

f. Item: Antenna Anchors, Section II, Part I, page 13. Tension
on guys should be checked and readings recorded daily. Any significant
change in readings would indicate deficiencies which may occur because of

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2nd Ind

SUBJECT: Operational Report - Lessons Learned for Quarterly Period
Ending 31 July 1967 (RCS CSFOR-65) WCEKAA

pulling anchors, tower shifting, or defective guys. Observation should be expanded to include daily checking of anchors, regardless of soil conditions.

g. Item: Power Generator Dummy Load Rield Expedient, Section II, Part I, page 13. Concur in operational requirement.

3. Nonconcur in the Commander's Observations as follows:

a. Item: Chaplain Supplies, Section II, Part I, page 15. Candles are available in the theater supply system; FSN: 9925-161-4300. Grape juice is available in the theater food supply system; FSN 8915-281-1809. Communion wafers are available through non-appropriated funds and may be ordered directly through denominational supply house, or may be purchased from Monastery of Perpetual Adoration, 771 Ashbury Street, San Francisco, California, 94117.

b. Item: RF Dummy Load, Section II, Part I, page 15. Attention is directed to TM 11-5820-554-15, dated 15 July 1965, Subject: Radio Set AN/FRC-93 (Collins Models KMW-2). Section III of subject manual lists Dummy Load DA-75/U as a required item of D:S. Maintenance.

FOR THE COMMANDER:

s/Thomas D. Bledsoe Jr.
t/THOMAS D. BLEDSOE JR.
Colonel, GS
Chief of Staff

AVHQG-DST (31 Jul 67)

3d Ind

SUBJECT: Operational Report-Lessons Learned for the Period Ending
31 July 1967 (CS 05700-65) (U)

HEADQUARTERS, UNITED STATES ARMY VIETNAM, APO San Francisco 96375

TO: Commander in Chief, United States Army, Pacific, AFM: CPO-OM,
APO 96558

1. This headquarters has reviewed the Operational Report-Lessons Learned for the period ending 31 July 1967 from Headquarters, 459th Signal Battalion (CEKA) as indorsed.

2. Pertinent comments follow:

a. Reference item concerning air conditioners, page 9, paragraph 8f and 2d Indorsement, paragraph 2b. Concur with Brigade Commander's added comments. Both the Battalion Commander and Group Commander have stated the problem accurately for the need of air conditioners. Deliveries were expected in September 1967 but some slippage has occurred. It is anticipated that required air conditioners for communications assemblages will be arriving in-country for issue soon.

b. Reference item concerning R² Dummy Load, section II, part I, page 15 and 2d Indorsement, paragraph 3b. Concur with Brigade Commander's comments contained in 2d Indorsement. Unit should requisition Dummy Load DA-75/U to be used in DS maintenance. The field expedient described in subject report can be used until procurement action of the authorized dummy load has been accomplished.

c. Reference item concerning Chaplain Supply Items, page 15, section II, part I and 2d Indorsement, paragraph 3a. Concur with 2d Indorsement, paragraph 3a. A review of availability of items in question validates referenced comment in the 2d Indorsement. The chaplain who made the observation arrived over a year ago and has since rotated. At the time of his arrival some difficulty with minor supply items may have existed; however, corrective action has been taken.

AV49C-DST (31 Jul 67)

3d Ind

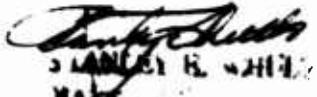
SUBJECT: Operational Report-Lessons Learned for the Period Ending
31 July 1967 (RCS CSFOR-45) (U)

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d. Reference item concerning operations, page 17, paragraph b. Concur with Battalion Commander's observations. MACV has directed that all Dial Central Offices under USARV control be graded as to classes of service by 15 November 1967, and all other USARV controlled telephone exchanges be graded by 31 December 1967. It is anticipated that these deadlines will be met without difficulty.

3. Unit will be notified of recommended actions, comments, and actions by this headquarters by a copy of this endorsement which will be furnished, through channels, to the preparing organization.

FOR THE COMMANDER:


S. LAMBERT R. WHILLIS
Major
USA
459th Sig Bn

c.c. HQ, 459th Sig Bn
HQ, 1st Sig Bde

GPOP-DT(31 Jul 67)

4th Ind

SUBJECT: Operational Report for the Quarterly Period Ending 31 July 1967
from HQ, 459th Sig Bn (UIC: WCEKAA) (RCS CSFOR-65)

HQ, US ARMY, PACIFIC, APO San Francisco 96558

1 DEC 1967

TO: Assistant Chief of Staff for Force Development, Department of the
Army, Washington, D. C. 20310

This headquarters has evaluated subject report and forwarding
indorsements and concurs in the report as indorsed.

FOR THE COMMANDER IN CHIEF:

P. J. O'Sullivan

K. F. OSBOURN
MAJ, AGC
Asst AG

UNCLASSIFIED

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